

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A game machine, comprising:

a traveling field, on which platen dots are provided;

a plurality of miniature members: and

a plurality of self-propelled members, which are provided on the traveling field, each of the self-propelled members including:

a base body;

a first yoke, provided in a bottom part of the base body to constitute which constitutes a first linear motor together with the platen dots for propelling the self-propelled member base body in a first direction on the traveling field, while maintaining a direction to which a front face of the base body is directed;

a second yoke, provided in a bottom part of the base body to constitute which constitutes a second linear motor together with the platen dots for propelling the self-propelled member base body in a second direction which is perpendicular to the first direction, while maintaining the direction to which the front face of the base body is directed;

a motor, having a shaft coupled with an associated one of the miniature members;

a miniature member, which is coupled with the motor so as to be rotatably supported on the self-propelled member; and

a controller, which controls the motor such that a rotated angle of the miniature member shaft so that a relative angle between the front face of the base body and a front face of the associated one of the miniature members is determined varied in accordance with a propelling direction of the self-propelled member base body.

2. (original): The game machine as set forth in claim 1, wherein ball bearings are provided on a bottom face of the self-propelled member to assist the propelling on the traveling field.

3. (original): The game machine as set forth in claim 1, wherein each of the first yoke and the second yoke is formed with three legs provided with coils, to constitute three-phase linear motor.

4. (original): The game machine as set forth in claim 3, wherein a lower end portion of each leg is split into plural projections each having an identical width with a width of each platen dot.

5. (original): The game machine as set forth in claim 2, wherein the ball bearings are composed of at least three independent ball bearings.

6. (original): The game machine as set forth in claim 2, wherein the ball bearings are supported within an annular retainer formed on the bottom face of the self-propelled member to constitute a thrust bearing.

7. (original): The game machine as set forth in claim 1, wherein the motor is a pulse motor.

8. (original): The game machine as set forth in claim 1, wherein nozzles from which air is blown toward a bottom face of the self-propelled member are formed on the traveling field to form an air bearing layer between the bottom face and the traveling field to support the self-propelled member thereon.

9. (original): The game machine as set forth in claim 8, wherein a skirt member is formed on a peripheral portion of the bottom face of the self-propelled member.

10. (original): The game machine as set forth in claim 1, wherein the self-propelled member includes a compressor for blowing compressed air toward the traveling field through nozzles formed on a bottom face thereof, to form an air bearing layer between the bottom face and the traveling field to support the self-propelled member thereon.

11. (currently amended): A self-propelled member which propels on a traveling field provided with platen dots thereon, comprising:

a miniature member;

a base body;

a first yoke, provided in a bottom part of the base body to constitute which constitutes a first linear motor together with the platen dots for propelling the self-propelled member base body in a first direction on the traveling field, while maintaining a direction to which a front face of the base body is directed;

a second yoke, provided in a bottom part of the base body to constitute which constitutes a second linear motor together with the platen dots for propelling the self-propelled member base body in a second direction which is perpendicular to the first direction, while maintaining the direction to which the front face of the base body is directed;

a motor, having a shaft coupled with the miniature member;

~~a miniature member, which is coupled with the motor so as to be rotatably supported on the self-propelled member; and~~

a controller, which controls the motor such that a rotated angle of the miniature member shaft so that a relative angle between the front face of the base body and a front face of the miniature member is determined varied in accordance with a propelling direction of the self-propelled member base body.

12. (original): The self-propelled member as set forth in claim 11, wherein ball bearings are provided on a bottom face of the self-propelled member to assist the propelling on the traveling field.

13. (original): The self-propelled member as set forth in claim 11, wherein each of the first yoke and the second yoke is formed with three legs provided with coils, to constitute three-phase linear motor.

14. (original): The self-propelled member as set forth in claim 13, wherein a lower end portion of each leg is split into plural projections each having an identical width with a width of each platen dot.

15. (original): The self-propelled member as set forth in claim 12, wherein the ball bearings are composed of at least three independent ball bearings.

16. (original): The self-propelled member as set forth in claim 12, wherein the ball bearings are supported within an annular retainer formed on the bottom face of the self-propelled member to constitute a thrust bearing.

17. (original): The self-propelled member as set forth in claim 11, wherein the motor is a pulse motor.

18. (currently amended): The self-propelled member as set forth in claim 11, wherein an air-flow receiving skirt member is formed on a peripheral portion of a bottom face of the self-propelled member.

19. (original): The self-propelled member as set forth in claim 11, wherein the self-propelled member includes a compressor for blowing compressed air toward the traveling field through nozzles formed on a bottom face thereof, to form an air bearing layer between the bottom face and the traveling field to support the self-propelled member thereon.

20. (currently amended): A racing game machine, comprising:

 a racing track;

 a traveling field extending below the racing track, on which platen dots are provided;

 a plurality of miniature members, which are provided on the racing track to be raced with each other, each of the miniature member members provided with a magnetic substance; and

 a plurality of self-propelled members, which are provided on the traveling field while being associated with the respective miniature members, each of the self-propelled member members including:

a base body;

 a first yoke, provided in a bottom part of the base body to constitute which constitutes a first linear motor together with the platen dots for propelling the self-propelled member base body in a first direction on the traveling field, while maintaining a direction to which a front face of the base body is directed;

 a second yoke, provided in a bottom part of the base body to constitute which constitutes a second linear motor together with the platen dots for propelling the self-propelled member base body in a second direction which is perpendicular to the first direction, while maintaining the direction to which the front face of the base body is directed;

 a guide magnet, which constitutes a torque transmission coupling with the magnetic substance of the an associated one of the miniature member members through the racing track;

 a motor, having a shaft couple with the guide magnet which rotates the guide magnet so as to turn a posture of the associated miniature member via a magnetic force; and

 a controller, which controls the motor such that a rotated angle of the guide magnet shaft so that a relative angle between the front face of the base body and a front face of the associated one of the miniature members is determined varied in accordance with a propelling direction of the self-propelled member base body.

21. (original): The game machine as set forth in claim 20, wherein ball bearings are provided on a bottom face of the self-propelled member to assist the propelling on the traveling field.

22. (original): The game machine as set forth in claim 20, wherein each of the first yoke and the second yoke is formed with three legs provided with coils, to constitute three-phase linear motors.

23. (original): The game machine as set forth in claim 22, wherein a lower end portion of each leg is split into plural projections each having an identical width with a width of each platen dot.

24. (original): The game machine as set forth in claim 21, wherein the ball bearings are composed of at least three independent ball bearings.

25. (original): The game machine as set forth in claim 21, wherein the ball bearings are supported within an annular retainer formed on the bottom face of the self-propelled member to constitute a thrust bearing.

26. (original): The game machine as set forth in claim 20, wherein each of the guide magnet of the self-propelled member and the magnetic substance of the miniature member is composed of arcuate N-pole magnets and arcuate S-pole magnets which are arranged alternately and annularly.

27. (original): The game machine as set forth in claim 20, wherein the motor is a pulse motor.

28. (currently amended): The game machine as set forth in claim 20, wherein nozzles from which air is ~~brown~~ blown toward a bottom face of the self-propelled member are formed on the traveling field to form an air bearing layer between the bottom face and the traveling field to support the self-propelled member thereon.

29. (original): The game machine as set forth in claim 28, wherein a skirt member is formed on a peripheral portion of the bottom face of the self-propelled member.

30. (original): The game machine as set forth in claim 20, wherein the self-propelled member includes a compressor for blowing compressed air toward the traveling field through nozzles formed on a bottom face thereof, to form an air bearing layer between the bottom face and the traveling field to support the self-propelled member thereon.

31. (original): The game machine as set forth in claim 20, wherein the magnetic substance of the miniature member is divided magnetic poles forming an induced magnet.

32. (original): The game machine as set forth in claim 21, wherein:

the ball bearings are made of metal, and

a conductive layer is formed on the traveling field for supplying electric power to the linear motors of the self-propelled member via the ball bearings.

33. (currently amended): A self-propelled member which propels on a traveling field provided with platen dots thereon, comprising:

a miniature member, which is provided with a magnetic substance and adapted to be provided on a racing track extending above the racing track;

a base body;

a first yoke, provided in a bottom part of the base body to constitute which constitutes a first linear motor together with the platen dots for propelling the self-propelled

member base body in a first direction on the traveling field, while maintaining a direction to which a front face of the base body is directed;

a second yoke, provided in a bottom part of the base body to constitute which constitutes a second linear motor together with the platen dots for propelling the self-propelled member base body in a second direction which is perpendicular to the first direction, while maintaining the direction to which the front face of the base body is directed;

a guide magnet, which constitutes a torque transmission coupling with the magnetic substance of the miniature member through the racing track;

a motor, having a shaft coupled with the guide magnet which rotates the guide magnet so as to turn a posture of the miniature member via a magnetic force; and

a controller, which controls the motor such that a rotated angle of the guide magnet shaft so that a relative angle between the front face of the base body and a front face of the miniature member is determined varied in accordance with a propelling direction of the self-propelled member base body.

34. (original): The self-propelled member as set forth in claim 33, wherein ball bearings are provided on a bottom face of the self-propelled member to assist the propelling on the traveling field.

35. (original): The self-propelled member as set forth in claim 33, wherein each of the first yoke and the second yoke is formed with three legs provided with coils, to constitute three-phase linear motors.

36. (original): The self-propelled member as set forth in claim 35, wherein a lower end portion of each leg is split into plural projections each having an identical width with a width of each platen dot.

37. (original): The self-propelled member as set forth in claim 34, wherein the ball bearings are composed of at least three independent ball bearings.

38. (original): The self-propelled member as set forth in claim 34, wherein the ball bearings are supported within an annular retainer formed on the bottom face of the self-propelled member to constitute a thrust bearing.

39. (original): The self-propelled member as set forth in claim 33, wherein each of the guide magnet of the self-propelled member and the magnetic substance of the miniature member is composed of arcuate N-pole magnets and arcuate S-pole magnets which are arranged alternately and annularly.

40. (original): The self-propelled member as set forth in claim 33, wherein the motor is a pulse motor.

41. (currently amended): The self-propelled member as set forth in claim 33, wherein an air-flow receiving skirt member is formed on a peripheral portion of a bottom face of the self-propelled member.

42. (original): The self-propelled member as set forth in claim 33, wherein the self-propelled member includes a compressor for blowing compressed air toward the traveling field through nozzles formed on a bottom face thereof, to form an air bearing layer between the bottom face and the traveling field to support the self-propelled member thereon.

43. (original): The game machine as set forth in claim 33, wherein the magnetic substance of the miniature member is divided magnetic poles forming an induced magnet.

44. (original): The game machine as set forth in claim 34, wherein the ball bearings are made of metal, through which electric power is supplied to the linear motors.